

PTO/SB/08A (08-03)

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| Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i> | | | | Complete if Known | |
| | | | | APPLICATION NUMBER | 10/714,088 |
| | | | | FILING DATE | 11/14/2003 |
| | | | | FIRST NAMED INVENTOR | Sreenivasan et al. |
| | | | | Group Art Unit | 1762 |
| | | | | Examiner Name | Marianne Padgett |
| | | | | Attorney Docket Number | P69-11-03 |
| Sheet | 1 | of | 2 | | |

| U.S. PATENT DOCUMENTS | | | | | | |
|-----------------------|-----------------------|----------------------|--------------------------------------|--|--|--|
| Examiner Initials* | Cite No. ² | U.S. Patent Document | | Name of Patent or Applicant of Cited Document | Date of Publication of Cited Document MM-DD-YYYY | Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear |
| | | Number | Kind Code ³ (if known) | | | |
| <i>MS</i> | E1 | 5,669,303 | | Maracas et al. | 9/23/1997 | |
| | E2 | 2004/0007799 | A1 | Choi et al. | 1/15/2004 | |
| | E3 | 2004/0021866 | A1 | Watts et al. | 2/5/2004 | |
| | E4 | 2004/0022888 | A1 | Sreenivasan et al. | 2/5/2004 | |
| | E5 | 2004/0124586 | A1 | Sreenivasan et al. | 7/1/2004 | |
| | E6 | 2003/0080472 | A1 | Chou | 5/1/2003 | |
| | E7 | 2003/0034329 | A1 | Chou | 2/20/2003 | |
| | E8 | 2002/0042027 | A1 | Chou et al. | 4/11/2002 | |
| | E9 | 2004/0250945 | A1 | Zheng et al. | 12/16/2004 | |
| | E10 | 2005/0037143 | A1 | Chou et al. | 2/17/2005 | |
| | E11 | 6,900,881 | | Sreenivasan et al. | 5/31/2005 | |
| | E12 | 6,908,861 | B2 | Sreenivasan et al. | 6/21/2005 | |
| | E13 | 6,916,584 | B2 | Sreenivasan et al. | 7/12/2005 | |
| <i>MS</i> | E14 | 2003/0062334 | A1 | Lee et al. | 4/3/2003 | |
| | E15 | 2005/0160011 | A1 | Sreenivasan et al. | 7/21/2005 | |
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|-----------------------|-------------------|--------------------|---------|
| Examiner Signature | <i>M. Padgett</i> | Date Considered | 10/2/05 |
|-----------------------|-------------------|--------------------|---------|

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| INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i> | | | | APPLICATION NUMBER | 10/714,088 |
| | | | | FILING DATE | 11/14/2003 |
| | | | | FIRST NAMED INVENTOR | Sreenivasan et al. |
| | | | | Group Art Unit | 1762 |
| | | | | Examiner Name | Marianne Padgett |
| Sheet | 2 | of | 2 | Attorney Docket Number | P69-11-03 |

| OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS | | | |
|---|----------|---|----------------|
| Examiner Initials* | Cite No. | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published. | T ² |

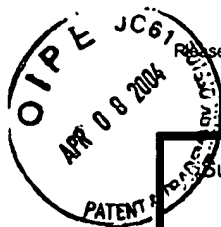
| | | | |
|--------------------|-----|---|--|
| <i>[Signature]</i> | E16 | APPLICATION NO. 11/101,139, naming Inventors Shackleton et al., entitled System for Controlling a Volume of Material on a Mold, filed 4/7/2005 | |
| <i>[Signature]</i> | E17 | APPLICATION NO. 11/101,140, naming Inventors McMackin, entitled Method for Fast Filling of Templates for Imprint Lithography Using on Template Dispense, filed 4/7/2005 | |
| | E18 | NERAG.COM RETRO SEARCH Fluid Dispensing, 6/4/2005 <i>? Website not a title</i> | |
| <i>[Signature]</i> | E19 | APPLICATION NO. 11/126,946, naming Inventors Choi et al., entitled Formation of Discontinuous Films During an Imprint Lithography Process, filed 5/11/2005 | |
| <i>[Signature]</i> | E20 | APPLICATION NO. 11/127,041, naming Inventors Sreenivasan et al., entitled Step and Repeat Imprint Lithography Processes, filed 5/11/2005 | |
| <i>[Signature]</i> | E21 | APPLICATION NO. 11/127,060, naming Inventors Sreenivasan et al., entitled Step and Repeat Imprint Lithography Systems, filed 5/11/2005 | |
| <i>[Signature]</i> | E22 | APPLICATION NO. 11/143,092, naming Inventors Lad et al., entitled Fluid Dispensing and Drop-on-Demand Dispensing for Nano-Scale Manufacturing, filed 6/2/2005 | |
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| | | | Filing Date | 11/14/2003 | |
| | | | First Named Inventor | McMackin et al. | |
| | | | Group Art Unit | Unassigned 1762 | |
| | | | Examiner Name | Unassigned Padgett | |
| Sheet | 1 | of | 6 | Attorney Docket Number | P69/MII-29-11-03 |

| U.S. PATENT DOCUMENTS | | | | | | |
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| Examiner Initials | Cite No. ¹ | U.S. Patent Document | | Name of Patentee or Applicant of Cited Document | Date of Publication of Cited Document MM-DD-YYYY | Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear |
| | | Number | Kind Code ² (If known) | | | |
| | B1 | 3,827,027 | | Heisler | 04-30-1974 | |
| | B2 | 3,807,029 | | Troeger | 04-30-1974 | |
| | B3 | 3,811,665 | | Seelig | 05-21-1974 | |
| | B4 | 4,062,600 | | Wyse | 12-13-1977 | |
| | B5 | 4,098,001 | | Watson | 07-04-1978 | |
| | B6 | 4,155,169 | | Drake et al. | 05-22-1979 | |
| | B7 | 4,202,107 | | Watson | 05-13-1980 | |
| | B8 | 4,337,579 | | De Fazio | 07-06-1982 | |
| | B9 | 4,355,469 | | Nevins et al. | 10-26-1982 | |
| | B10 | 4,414,750 | | De Fazio | 11-15-1983 | |
| | B11 | 4,440,804 | | Milgram | 04-03-1984 | |
| | B12 | 4,544,572 | | Sandvig et al. | 10-01-1985 | |
| | B13 | 4,610,442 | | Oku et al. | 09-09-1986 | |
| | B14 | 4,694,703 | | Routson | 09-22-1987 | |
| | B15 | 4,763,886 | | Takei | 08-16-1988 | |
| | B16 | 4,929,083 | | Brunner | 05-29-1990 | |
| | B17 | 4,959,252 | | Bonnebat et al. | 09-25-1990 | |
| | B18 | 5,072,126 | | Progler | 12-10-1991 | |
| | B19 | 5,110,514 | | Soane | 05-05-1992 | |
| | B20 | 5,126,006 | | Cronin et al. | 06-30-1992 | |
| | B21 | 5,204,739 | | Domenicali | 04-20-1993 | |
| | B22 | 5,240,550 | | Boehnke et al. | 08-31-1993 | |
| | B23 | 5,348,616 | | Hartman et al. | 09-20-1994 | |
| | B24 | 5,392,123 | | Marcus et al. | 02-21-1995 | |
| | B25 | 5,452,090 | | Progler et al. | 09-19-1995 | |
| | B26 | 5,512,131 | | Kumar et al. | 04-30-1996 | |
| | B27 | 5,515,167 | | Ledger et al. | 05-07-1996 | |
| | B28 | 5,545,367 | | Bae et al. | 08-13-1996 | |
| | B29 | 5,566,584 | | Briganti | 10-22-1996 | |
| | B30 | 5,633,505 | | Chung et al. | 05-27-1997 | |
| | B31 | 5,723,176 | | Keyworth et al. | 03-03-1998 | |
| | B32 | 5,753,014 | | Van Rijn | 05-19-1998 | |
| | B33 | 5,760,500 | | Kondo et al. | 06-02-1998 | |
| | B34 | 5,802,914 | | Fassler et al. | 09-08-1998 | |
| Examiner Signature | | | | | Date Considered | 8/11/05 |

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| | | | | Group Art Unit | Unassigned |
| | | | | Examiner Name | Unassigned |
| | | | | Attorney Docket Number | P69/MII-29-11-03 |
| Sheet | 2 | of | 6 | | |

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet

3

of

6

Application Number

10/714.088

Filing Date

11/14/2003

First Named Inventor

McMackin et al.

Group Art Unit

Unassigned

Examiner Name

Unassigned

Attorney Docket Number

P69/MII-29-11-03

FOREIGN PATENT DOCUMENTS

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**Examiner
Signature**

Date
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| | | First Named Inventor | McMackin et al. |
| | | Group Art Unit | Unassigned |
| | | Examiner Name | Unassigned <i>Palgott</i> |
| Sheet 4 of 6 | Attorney Docket Number | P69/MII-29-11-03 | |

| OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS | | | |
|---|----------|---|----------------|
| Examiner Initials* | Cite No. | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published. | T ² |
| <i>MSP</i> | B64 | STEWART, "A Platform with Six Degrees of Freedom," Proc. of Inst. Mech. Engrs., 1965 pp. 371-378, vol. 180 pt. 1, no. 15. <i>no more</i> | |
| <i>MSP</i> | B65 | PAROS et al., "How to Design Flexure Hinges," Machine Design, Nov. 25, 1965, pp. 151-156. | |
| <i>MSP</i> | B66 | RAIBERT et al., "Hybrid Position/Force Control of Manipulators," Transactions of the ASME, Journal of Dynamic Systems, Measurement and Control, June 1981, pp. 126-133, vol. 102. | |
| <i>MSP</i> | B67 | HOGAN, "Impedance Control: An Approach to Manipulation," Journal of Dynamic Systems, Measurement and Control, March 1985, pp. 1-7, vol. 107. | |
| <i>MSP</i> | B68 | COWIE, "Polymers: Chemistry and Physics of Modern Materials," 1991, pp. 408-409, 2 nd Ed, Chapman and Hall, a division of Routledge, Chapman and Hall, Inc., 29 West 35 th Street, NY, NY 10001-2291. <i>no more</i> | |
| <i>MSP</i> | B69 | HOLLIS et al., "A Six-Degree-of-Freedom Magnetically Levitated Variable Compliance Fine Motion Wrist: Design, Modeling and Control," IEEE Transactions on Robotics and Automation, 1991, pp. 320-332, vol. 7, no. 3. <i>no more</i> | |
| <i>MSP</i> | B70 | TOMITA et al., "A 6-Axes Motion Control Method for Parallel-Linkage-Type Fine Motion Stage," Journal of Japan Society of Precision Engineering, 1992, pp. 118-124. <i>no more - only abstract in English</i> | |
| <i>MSP</i> | B71 | SLOCUM, "Precision Machine Design: Macromachine Design Philosophy and its Applicability to the Design of Micromachines," Micro Electro Mechanical Systems, 1992, pp. 37-42. <i>Feb.</i> | |
| <i>MSP</i> | B72 | ARAI et al., "Calibration and Basic Motion of a Micro Hand Module," Proc. of IEEE, 1993, pp. 1660-1665. <i>no more</i> | |
| <i>MSP</i> | B73 | PENG et al., "Compliant Motion Control of Kinematically Redundant Manipulators," IEEE Transactions on Robotics and Automation, December 1993, pp. 831-837, vol. 9, no. 6. | |
| <i>MSP</i> | B74 | HASHIMOTO et al., "Design and Characteristics of Parallel Link Compliant Wrist," IEEE International Conference on Robotics and Automation, 1994, pp. 2457-2462. | |

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|--------------------|----------------------|-----------------|---------|
| Examiner Signature | <i>M. L. Palgott</i> | Date Considered | 8/11/05 |
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| | | First Named Inventor | McMackin et al. | | |
| | | Group Art Unit | Unassigned | | |
| | | Examiner Name | Unassigned <i>Palgett</i> | | |
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| Sheet | 5 | of | 6 | | |

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| Examiner Initials* | Cite No. | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published. | T ² |
| <i>[Signature]</i> | B75 | MERLET, "Parallel Manipulators: State of the Art Perspectives," Advanced Robotics, 1994, pp. 589-596, vol. 8. <i>no month</i> | |
| <i>[Signature]</i> | B76 | ANANTHASURESH et al., "Strategies for Systematic Synthesis of Compliant MEMS," ASME, DSC-vol. 55-2, Dynamic Systems and Control, 1994, pp. 677-686, vol. 2. <i>no month</i> | |
| <i>[Signature]</i> | B77 | HOWELL et al., "Loop-Closure Theory for the Analysis and Synthesis of Compliant Mechanisms," Journal of Mechanical Design, March 1996, pp. 121-125, vol. 118. | |
| <i>[Signature]</i> | B78 | PERNETTE et al., "Design of Parallel Robots in Microrobotics," Robotica, July-August 1997, pp. 417-420, vol. 15, no. 4. | |
| <i>[Signature]</i> | B79 | MITTAL et al., "Precision Motion Control of Magnetic Suspension Actuator Using a Robust Nonlinear Compensation Scheme," IEEE/ASME Transactions on Mechatronics, Dec. 1997, pp. 268-280, vol. 2, no. 4. | |
| <i>[Signature]</i> | B80 | LEE et al., "An Ultraprecision Stage for Alignment of Wafers in Advanced Microlithography," Precision Engineering, 1997, pp. 113-122, vol. 21, Elsevier Science Inc., 655 Avenue of the Americas, NY, NY 10010. <i>Sept/Dec.</i> | |
| <i>[Signature]</i> | B81 | KANETOMO et al., "Robot for Use in Ultrahigh Vacuum," Solid State Tech., August 1997, pp. 63-64, 69-72. | |
| <i>[Signature]</i> | B82 | KOSEKI et al., "Design and Accuracy Evaluation of High-Speed and High-Precision Parallel Mechanism," Proc. of the 1998 IEEE, Intl. Conf. on Robotics & Automation, May 1998, pp. 1340-1345, Leuven, Belgium. | |
| <i>[Signature]</i> | B83 | KIM et al., "High Precision Magnetic Levitation Stage for Photolithography," Precision Engineering, 1998, pp. 66-77, vol. 22, Elsevier Science Inc., 655 Avenue of the Americas, NY, NY 10010. <i>no month</i> | |
| <i>[Signature]</i> | B84 | MANSKY et al., "Large-Area Domain Alignment in Block Copolymer Thin Films Using Electric Fields," Macromolecules, 1998, pp. 4399-4401, vol. 31. <i>no month</i> | |
| <i>[Signature]</i> | B85 | WANG et al., "Passive Compliance Versus Active Compliance in Robot-Based Automated Assembly Systems," Industrial Robot, 1998, pp. 48-57, vol. 25, no. 1, MCB University Press. <i>no month</i> | |

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| | | | Group Art Unit | Unassigned | |
| | | | Examiner Name | Unassigned <i>Pedgett</i> | |
| Sheet | 6 | of | 6 | Attorney Docket Number | P69/MII-29-11-03 |

| OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS | | | |
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| Examiner Initials* | Cite No. | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published. | T ² |
| <i>HP</i> | B86 | TAJBAKSH et al., "Three-Degree-of-Freedom Optic Mount for Extreme Ultraviolet Lithography," ASPE, 1998, pp. 359-362, vol. 18. <i>no month</i> | |
| <i>HP</i> | B87 | LEE et al., "Ultra Precision Positioning System for Servo Motor-Piezo Actuator Using the Dual Servo Loop and Digital Filter Implementation," ASPE, 1998, pp. 287-290, vol. 18. <i>no month</i> | |
| <i>HP</i> | B88 | OHYA et al., "Development of 3-DOF Finger Module for Micro Manipulation," Proc. of the 1999 IEEE/RSJ, Intl. Conf. on Intelligent Robots and Systems, 1999, pp. 894-899. <i>no month</i> | |
| <i>HP</i> | B89 | TANIKAWA et al., "Development of Small-Sized 3 DOF Finger Module in Micro Hand for Micro Manipulation," Proc. of the IEEE/RSJ, Intl. Conf. on Intelligent Robots and Systems, 1999, pp. 876-881. <i>no month</i> | |
| <i>HP</i> | B90 | RUCHHOEFT et al., "Patterning Curved Surfaces: Template Generation by Ion Beam Proximity Lithography and Relief Transfer by Step and Flash Imprint Lithography," Journal of Vacuum Science and Technology, 1999, pp. 2965-2982, vol. 17. <i>no month</i> | |
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| Examiner Signature | <i>[Signature]</i> | Date Considered | <i>4/8/8/16/05</i> |
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| Application Number | 10/714,088 |
| Filing Date | 11/14/2003 |
| First Named Inventor | McMackin et al. |
| Art Unit | 1762 |
| Examiner Name | Padgett, Marianne |
| Attorney Docket Number | P69-11-03 |

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| Sheet | 1 | of | 1 |
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U. S. PATENT DOCUMENTS

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| APPLICATION NUMBER | 10/714,088 |
| FILING DATE | 11/14/2003 |
| FIRST NAMED INVENTOR | McMackin et al. |
| Group Art Unit | 1762 |
| Examiner Name | Padgett, Marianne |
| Attorney Docket Number | P69-11-03 |

U.S. PATENT DOCUMENTS

| Examiner Initials* | Cite No. ¹ | U.S. Patent Document | | Name of Patentee or Applicant of Cited Document | Date of Publication of Cited Document MM-DD-YYYY | Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear |
|----------------------------|-----------------------|----------------------|-----------------------------------|---|--|---|
| | | Number | Kind Code ² (if known) | | | |
| <i>[Handwritten marks]</i> | C1 | 5,772,905 | | Chou | 6/30/1998 | |
| | C2 | 6,309,580 | B1 | Chou | 10/30/2001 | |
| | C3 | 6,391,217 | B2 | Schaffer et al. | 5/21/2002 | |
| | C4 | 6,696,220 | B2 | Bailey et al. | 2/24/2004 | |
| | C5 | 10/760,821 | | Sreenivasan et al. | 1/20/2004 | |
| | C6 | 10/788,700 | | Sreenivasan et al. | 2/27/2004 | |
| | C7 | 2002/0177319 | A1 | Chou | 11/28/2002 | |
| | C8 | 6,713,238 | B1 | Chou et al. | 3/30/2004 | |
| | C9 | 2004/0065976 | A1 | Sreenivasan et al. | 4/8/2004 | |
| | C10 | 6,646,662 | B1 | Nebashi et al. | 11/11/2003 | |
| | C11 | 6,776,094 | B1 | Whitesides et al. | 8/17/2004 | |
| | C12 | 6,518,189 | B1 | Chou | 2/11/2003 | |
| | C13 | 2002/0132482 | A1 | Chou | 9/19/2002 | |
| | C14 | 2002/0167117 | A1 | Chou | 11/14/2002 | |
| | C15 | 6,482,742 | B1 | Chou | 11/19/2002 | |
| | C16 | 2003/0080471 | A1 | Chou | 5/1/2003 | |
| | C17 | 2004/0036201 | A1 | Chou et al. | 2/26/2004 | |
| | C18 | 2004/0192041 | A1 | Jeong et al. | 9/30/2004 | |

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| | | | | FILING DATE | 11/14/2003 |
| | | | | FIRST NAMED INVENTOR | McMackin et al. |
| | | | | Group Art Unit | 1762 |
| | | | | Examiner Name | Padgett, Marianne |
| Sheet | 2 | of | 6 | Attorney Docket Number | P69-11-03 |

| U.S. PATENT DOCUMENTS | | | | | | |
|-----------------------|--------------------------|----------------------|--------------------------|--|--|--|
| Examiner Initials* | Cite No. ¹ | U.S. Patent Document | | Name of Patentee or Applicant of Cited Document | Date of Publication of Cited Document MM-DD-YYYY | Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear |
| | | Number | Kind Code* (if known) | | | |

| | | | | | | |
|--|-----|--------------|----|--------------------|------------|---------|
| | C19 | 6,828,244 | B2 | Chou | 12/7/2004 | |
| | C20 | 6,809,356 | B2 | Chou | 10/26/2004 | |
| | C21 | 2004/0197843 | A1 | Chou et al. | 10/7/2004 | |
| | C22 | 2004/0156108 | A1 | Chou et al. | 8/12/2004 | |
| | C23 | 2004/0137734 | A1 | Chou et al. | 7/15/2004 | |
| | C24 | 2004/0131718 | A1 | Chou et al. | 7/8/2004 | |
| | C25 | 2004/0118809 | A1 | Chou et al. | 6/24/2004 | |
| | C26 | 2004/0046288 | A1 | Chou | 3/11/2004 | |
| | C27 | 2003/0080472 | A1 | Chou | 5/1/2003 | |
| | C28 | 2003/0034329 | A1 | Chou | 2/20/2003 | |
| | C29 | 2002/0042027 | A1 | Chou et al. | 4/11/2002 | |
| | C30 | 6,580,172 | B2 | Mancini et al. | 6/17/2003 | |
| | C31 | 10/706,537 | | Sreenivasan et al. | 11/12/2003 | |
| | C32 | 10/858,566 | | Truskett et al. | 6/1/2004 | |
| | C33 | 11/005,742 | | McMackin et al. | 12/7/2004 | abandon |
| | C34 | 11/006,363 | | McMackin et al. | 12/7/2004 | |
| | C35 | 4,512,848 | | Deckman et al. | 4/23/1985 | |
| | C36 | 6,517,995 | B1 | Jacobenson et al. | 2/11/2003 | |

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| Examiner Signature | <i>[Signature]</i> | Date Considered | 8/16/05 |
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| INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i> | | | | APPLICATION NUMBER | 10/714,088 |
| | | | | FILING DATE | 11/14/2003 |
| | | | | FIRST NAMED INVENTOR | McMackin et al. |
| | | | | Group Art Unit | 1762 |
| | | | | Examiner Name | Padgett, Marianne |
| Sheet | 4 | of | 6 | Attorney Docket Number | P69-11-03 |

| FOREIGN PATENT DOCUMENTS | | | | | | | | |
|--------------------------|--------------------------|-------------------------|---------------------|--------------------------------------|--|--|--|----------------|
| Examiner Initials* | Cite No. ¹ | Foreign Patent Document | | | Name of Patentee or Applicant of Cited Document | Date of Publication of Cited Document MM-DD-YYYY | Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear | T ² |
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| <i>MSPP</i> | C42 | WO | 2004/016406 | | Sreenivasan | 2/26/2004 | | |
| <i>MSPP</i> | C43 | WO | 00/21689 | | Chou et al. | 4/20/2000 | | |
| <i>MSPP</i> | C44 | JP | 02-92603 | | Kurikawa et al. | 4/3/1990 | <i>See trans.</i> | |
| <i>MSPP</i> | C45 | JP | 02-24848 | | Kamio | 1/26/1990 | <i>See trans</i> | |
| <i>MSPP</i> | C46 | WO | 01/47003 | | Steiner et al. | 6/28/2001 | | |
| <i>MSPP</i> | C47 | WO | 02/07199 | | Chou | 1/24/2002 | | |
| <i>MSPP</i> | C48 | WO | 2004/114016 | | Chou et al. | 12/29/2004 | | |
| <i>MSPP</i> | C49 | WO | 99/05724 | | Chou et al. | 2/4/1999 | | |
| <i>MSPP</i> | C50 | WO | 03/010289 | | Chou et al. | 2/6/2003 | | |
| <i>MSPP</i> | C51 | WO | 03/079416 | | Chou | 9/25/2003 | | |
| <i>MSPP</i> | C52 | WO | 03/099536 | | Chou et al. | 12/4/2003 | | |
| <i>MSPP</i> | C53 | WO | 2004/013693 | | Watts et al. | 2/12/2004 | | |
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| Examiner Signature | <i>M. Padgett</i> | Date Considered | <i>8/11/05</i> |
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| INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i> | | | | APPLICATION NUMBER | 10/714,088 |
| | | | | FILING DATE | 11/14/2003 |
| | | | | FIRST NAMED INVENTOR | McMackin et al. |
| | | | | Group Art Unit | 1762 |
| | | | | Examiner Name | Padgett, Marianne |
| Sheet <u>5</u> of <u>6</u> | | | | Attorney Docket Number | P69-11-03 |

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|------------|-----|---|--|
| <i>MSP</i> | C54 | Colburn et al., Step and Flash Imprint Lithography for sub-100 nm Patterning, Proceedings of SPIE Vol. 3997, pp. 453 - 457, <u>11/1/2000</u> | |
| <i>MSP</i> | C55 | Johnson et al., Advances in Step and Flash Imprint Lithography, SPIE Microlithography Conference, <u>2/23/2003</u> | |
| <i>MSP</i> | C56 | Heidari, Nanoimprint Lithography at the 6 in. Wafer Scale, J. Vac. Sci. Technol. B 18(6), pp. 3557 - 3560, <u>11/1/2000</u> | |
| <i>MSP</i> | C57 | Translation of Japanese Patent 02-92603 <i>April 3, 1990 to Kurikawa et al</i> | |
| <i>MSP</i> | C58 | Translation of Japanese Patent 02-24848 <i>Jan. 26, 1990 Kramio has blacked out words</i> | |
| <i>MSP</i> | C59 | Chou et al., Ultrafast and Direct Imprint of Nanostructures in Silicon, Nature, Col. 417, (June 2002), pp. 835-837, <u>6/1/2002</u> | |
| <i>MSP</i> | C60 | Chou et al., Nanoimprint Lithography, Journal of Vacuum Science Technolgy B 14(16), pp. 4129-4138, <u>11/1/1996</u> | |
| <i>MSP</i> | C61 | Colburn et al., Development and Advantages of Step-and-Flash Lithography, Solid State Technology, 7/1/2001 | |
| <i>MSP</i> | C62 | Colburn et al., Characterization and Modeling of Volumetric and Mechanical Properties for Step and Flash Imprint Lithography Photopolymers, Journal of Vacuum Science Technology. Vol b. 19(6), 11/1/2001 | |

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|-----------------------|-------------------|--------------------|----------------|
| Examiner Signature | <i>M. Padgett</i> | Date Considered | <i>8/14/05</i> |
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|--|-----|---|--|
|  | C63 | Bailey et al., Step and Flash Imprint Lithography: Defect Analysis, Journal of Vacuum Science, B 19(6), pp. 2806-2810, 11/1/2001 | |
|  | C64 | Bailey et al., Step and Flash Imprint Lithography: Template Surface Treatment and Defect Analysis, Journal of Vacuum Science, B 18(6), pp. 3572-3577, 11/1/2000 | |
|  | C65 | Schneider et al., Stripes of Partially Fluorinated Alkyl Chains: Dipolar Langmuir Monolayers | |
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
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| Examiner Name | Unassigned <i>Pag</i> |
| Attorney Docket Number | P69/MII-29-11-03 |

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Sheet 3 of 5

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|------------------------|--------------------------------------|
| Application Number | 10/714,088 |
| Filing Date | 11/14/2003 |
| First Named Inventor | McMackin et al. |
| Group Art Unit | Unassigned <i>1702</i> |
| Examiner Name | Unassigned <i>Polyott</i> |
| Attorney Docket Number | P69/MII-29-11-03 |

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|--------------------|----------|---|----------------|
| <i>MLP</i> | A21 | Gokan et al., "Dry Etch Resistance of Organic Materials," J. Electrochem. Soc. 130:1, 143-146 (Jan. 1983) | |
| <i>MLP</i> | A22 | LIN, "Multi-Layer Resist Systems", Introduction of Microlithography," American Chemical Society, 1983, pp. 287-350, IBM T.J. Watson Research Center, Yorktown Heights, New York 10598. | |
| <i>MLP</i> | A23 | KRUG et al., "Fine Patterning of Thin Sol-Gel Films," Journal of Non-Crystalline Solids, 1992, pp. 447-450, vol. 147 & 148. <i>no month</i> | |
| <i>MLP</i> | A24 | Kotachi et al., "Si-Containing Positive Resist for ArF Laser Lithography," J. Photopolymer Sci. Technol. 8(4) 615-622, 1995. <i>no month</i> | |
| <i>MLP</i> | A25 | Krauss et al., "Fabrication of Nanodevices Using Sub-25nm Imprint Lithography," Appl. Phys. Lett 67(21), 3114-3116, 1995 <i>no month</i> | |
| <i>MLP</i> | A26 | CHOU et al., "Imprint of Sub-25 nm Vias and Trenches in Polymers," Applied Physics Letters, November 20, 1995, pp. 3114-3116, vol. 67(21). | |
| <i>MLP</i> | A27 | CHOU et al., "Imprint Lithography with 25-Nanometer Resolution," Science, Apr. 5, 1996, pp. 85-87, vol. 272. | |
| <i>MLP</i> | A28 | HAISMA et al., "Mold-Assisted Nanolithography: A Process for Reliable Pattern Replication," Journal of Vacuum Science and Technology, Nov/Dec 1996, pp. 4124-4128, vol. B 14(6). | |
| <i>MLP</i> | A29 | CHOU et al., "Imprint Lithography with Sub-10nm Feature Size and High Throughput," Microelectronic Engineering, 1997, pp. 237-240, vol. 35. <i>no month</i> | |
| <i>MLP</i> | A30 | SCHEER et al., "Problems of the Nanoimprinting Technique for Nanometer Scale Pattern Definition," Journal of Vacuum Science and Technology, Nov/Dec 1998, pp. 3917-3921, vol. B 16(6). | |
| <i>MLP</i> | A31 | XIA et al., "Soft Lithography," Annu. Rev. Mater. Sci., 1998, pp. 153-184, vol. 28. <i>no month</i> | |

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| Examiner Signature | <i>Michael Polyott</i> | Date Considered | <i>8/11/05</i> |
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| Group Art Unit | Unassigned <i>1702</i> |
| Examiner Name | Unassigned <i>Pedgett</i> |
| Attorney Docket Number | P69/MII-29-11-03 |

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| <i>MSP</i> | A32 | XIA et al., "Soft Lithography," Agnew. Chem. Int. Ed., 1998, pp. 550-575, vol. 37. <i>no month</i> | |
| <i>MSP</i> | A33 | WU et al., "Large Area High Density Quantized Magnetic Disks Fabricated Using Nanoimprint Lithography," Journal of Vacuum Science and Technology, Nov/Dec 1998, pp. 3825-3829, vol. B 16(6). | |
| <i>MSP</i> | A34 | COLBURN. et al., "Step and Flash Imprint Lithography: A New Approach to High-Resolution Patterning", Proc. of SPIE, 1999, pp. 379-389, vol. 3676. <i>no month</i> | |
| <i>MSP</i> | A35 | CHOU et al., "Lithographically-Induced Self Assembly of Periodic Polymer Micropillar Arrays," Journal of Vacuum Science and Technology, Nov/Dec 1999, pp. 3197-3202, vol. B 17(6). | |
| <i>MSP</i> | A36 | CHOI et al., "Design of Orientation Stages for Step and Flash Imprint Lithography," Precision Engineering, Journal of the International Societies for Precision Engineering and Nanotechnology (2001), pp. 192-199, vol. 25. <i>no month</i> | |
| <i>MSP</i> | A37 | CHOU, "Nanoimprint Lithography and Lithographically Induced Self-Assembly," MRS Bulletin, July 2001, pp. 512-517. <i>part-illegible</i> | |
| <i>MSP</i> | A38 | MIRKIN et al., "Emerging Methods for Micro-and Nanofabrication," MRS Bulletin, July 2001, pp. 506-509 | |
| <i>MSP</i> | A39 | CHOI et al., "High Precision Orientation Alignment and Gap Control Stages for Imprint Lithography Processes," U.S. Patent Application 09/698,317, Filed with USPTO on October 27, 2000.. <i>now PNG 6,873,087</i> | |
| <i>MSP</i> | A40 | SREENIVASAN et al., "High-Resolution Overlay Alignment Methods and Systems for Imprint Lithography," U.S. Patent Application 09/907,512, Filed with USPTO on July 16, 2001. <i>now 6,921,165</i> | |
| <i>MSP</i> | A41 | CHOI et al., "Method and System of Automatic Fluid Dispensing for Imprint Lithography Processes," U.S. Patent Application 09/908,455, Filed with USPTO on July 17, 2001. <i>= 2002/0094496 pending</i> | |
| <i>MSP</i> | A42 | CHOI et al., "Methods for High-Precision Gap and Orientation Sensing Between a Transparent Template and Substrate for Imprint Lithography," U.S. Patent Application 09/920,341, Filed with USPTO on August 1, 2001. <i>= 2002,009712, Allowed</i> | |

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|--------------------|----------|---|----------------|
| <i>MyJP</i> | A43 | Nguyen, A. Q., "Asymmetric Fluid-Structure Dynamics in Nanoscale Imprint Lithography," University of Texas at Austin, August 2001. <i>thesis</i> | |
| <i>MyJP</i> | A44 | CHOI et al., "Flexure Based Macro Motion Translation Stage," U.S. Patent Application 09/934,248, Filed with USPTO on August 21, 2001. <i>= 20020150398, pending</i> | |
| | A45 | BAILEY et al., "Template for Room Temperature Low Pressure Micro- and Nano-Imprint Lithography," U.S. Patent Application 09/976,681, Filed with USPTO on October 12, 2001. <i>now 6,696,220</i> | |
| | A46 | VOISIN, "Methods of Manufacturing a Lithography Template," U.S. Patent Application 10/136,188, Filed with USPTO on May 1, 2002. <i>= 2003/0205657, pending</i> | |
| | A47 | WILLSON et al., "Method and System for Fabricating Nanoscale Patterns in Light Curable Compositions Using an Electric Field," U.S. Patent Application 09/905,718, Filed with USPTO on May 16, 2002. <i>= 2003/0215577, allowed</i> | |
| | A48 | WATTS et al., "System and Method for Dispensing Liquids," U.S. Patent Application 10/191,749, Filed with USPTO July 9, 2002. <i>= 2003/0215577 - 155 reference allowed</i> | |
| | A49 | SREENIVASAN et al., "Method and System for Imprint Lithography Using an Electric Field," U.S. Patent Application 10/194,410, Filed with USPTO July 11, 2002. <i>now PN. 6,908,861</i> | |
| | A50 | SREENIVASAN et al., "Step and Repeat Imprint Lithography Systems," U.S. Patent Application 10/194,414, Filed with USPTO July 11, 2002. <i>now PN. 6,900,887</i> | |
| <i>MyJP</i> | A51 | SREENIVASAN et al., "Step and Repeat Imprint Lithography Processes," U.S. Patent Application 10/194,991, Filed with USPTO July 11, 2002. <i>= 2004/0124866, allowed</i> | |
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